

# **Contingency Exercise Plan for Expedition 2**

- **Exercise Requirements for TVIS**
  - **SSP 50261, Generic Groundrules and Constraints, section 4.3.1.41 (ref. CR 5262) specifies that..**
    - **“complete failure of single exercise hardware use (eg TVIS) use... will result in consideration of mission termination within 60 days”**
- **TVIS provides the following exercise benefits**
  - **Cardiovascular (Aerobic) Exercise**
  - **Ambulation (neuromuscular patterning)**
    - **TVIS unique capability – extensive Russian experience suggests this is critical to post flight crew health, safety, and performance**
  - **Axial skeletal loading (heel strike, etc.)**
    - **TVIS unique capability**
  - **Endurance exercise of anti-gravity musculature**

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- **Mitigation Strategy for Expedition 2**
  - **Loss of TVIS can be accommodated for an interim period using a combination of CEVIS, iRED and TVIS contingency exercises**
    - **Cycle/iRED thru 6A**
    - **TVIS functionality planned to be restored post-6A**
      - **Russian data suggests passive TVIS ops may extend slat life by reducing imparted forces**
      - **If TVIS functionality not secured, Cycle/iRED/TVIS contingency plate 6A-7A**
  - **Full TVIS functionality required by 7A or mission termination must be considered**

\* Unique TVIS capability

# EXPEDITION 2 EXERCISE PLAN

